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The Results of a Mastitis Herd Survey in the N.E. Midland Area During 1946-48

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In the course of studies on penicillin therapy against *Str. agalactiae* infections, it has been necessary to examine bacteriologically milk samples from several herds in the N.E. Midland area (Nottinghamshire, Leicestershire and Derbyshire). Access to these herds was obtained through the courtesy of local veterinary surgeons who referred them to this laboratory as "mastitis problem" herds. The findings are considered to be of sufficient interest to record and make certain comments thereon.

Although there are numerous references in the literature to the incidence of specific organisms and their relationship to individual cases of mastitis, we have been unable to find any recent publications recording the predominating infections on a herd basis. It is widely stated that infection with *Str. agalactiae* is by far the most common form of mastitis. Thus the N.V.M.A. Report on Diseases of Farm Livestock (1941) states that the evidence they received was unanimous in agreeing that *Str. agalactiae* was responsible for 80 to 90 per cent. of all cases of mastitis, whether clinical or sub-clinical. The report goes on to say, "In the absence of a country wide survey of the incidence of this form of mastitis (*Str. agalactiae*), the total loss caused by it cannot be accurately computed. The disease is far more widespread than is generally appreciated. The incidence varies greatly and may reach 100 per cent. in badly infected herds. Experienced workers agree that between 20 and 30 per cent. of all cows producing milk suffer from mastitis. . . ."

Stableforth (1948) has briefly mentioned that samples were examined by his colleagues from 1,749 cows in 48 herds; 24·8 per cent. of these cows were infected with *Str. agalactiae*, other streptococci were found in a further 9 per cent. and staphylococci were found in 8 per cent. of the cows. Ten years previously the incidence of *Str. agalactiae* infections was 30 to 35 per cent. He suggests that this 10 per cent. reduction may be attributable to more intensive therapy in recent years. He made no mention of the level of infection in the individual herds nor of their geographical distribution.

METHODS

The herds were sampled by the author or by laboratory personnel under his personal supervision. Milk samples were taken prior to the afternoon milk after rejection of the fore milk. The teat orifices were cleansed with sterile cotton wool plugs soaked in methylated spirit, rubber gloves were worn by the samplers and rinsed in hypochlorite solution between each cow. Composite samples, *i.e.*, one per cow, were drawn into sterile 1 oz. screw cap bottles. The samples were inoculated on to culture media during the evening of the same day that they were taken. One tenth of a ml. of shaken whole milk was inoculated on to the surface of ox blood agar containing aesculin but no inhibitory agents. The Petri plates were incubated for 48 hours at 37° C. *Str. agalactiae* was identified by its colonial appearance and precipitin tests with specific anti-streptococcal Group B serum; *Str. dysgalactiae* by its characteristic effects on blood agar and precipitin tests with anti-streptococcal Group H (or Group C) serum. Extracts for these tests were prepared by Lancefield's method and tested against Weybridge sera. Staphylococci were regarded as potentially pathogenic by their capacity to coagulate rabbit plasma by the slide and tube tests, secondary attention being paid to haemolysis and pigment production.

RESULTS

TABLE I

HERD 1946-1948 SURVEY

Herd	Cows sampled	*Str. agalactiae* positive	*Str. dysgalactiae* positive	*Staph. pyogenes* positive	% *Str. agalactiae* positive	% *Str. dysgalactiae* positive	% *Staph. pyogenes* positive
H.A.	43	3	0	4	6·9	0	9·3
T.B.1	32	7	0	6	21·8	0	18·7
G.P.	25	2	0	1	8·0	0	4·0
C.H.	37	7	4	0	18·9	10·8	0
B.K.	40	15	0	16	37·5	0	40·0
T.B.2	24	2	0	5	8·3	0	20·0
K.	29	0	2	9	0	6·9	31·0
B.	31	2	0	10	6·4	0	32·2
L.H.	27	2	0	3	7·4	0	11·1
M.T.	25	1	0	8	4·0	0	32·0
S.A.	15	8	0	2	53·3	0	13·3
Mc.K.	35	2	0	5	5·7	0	14·2
C.G.	28	10	6	1	35·7	21·4	3·5
S.B.	37	0	1	2	0	2·7	5·4
L.M.	37	0	2	16	0	5·4	43·2
L.E.	37	14	2	1	37·8	5·4	2·7
A.	36	6	1	5	16·6	2·7	13·8
M.K.	32	2	4	22	6·2	12·4	68·7
G.	21	8	2	4	38·0	9·5	19·0
Total	591	91	24	120	15·2	4·0	20·3

The results are tabulated in Table I. A total of 591 cows in 19 herds have been examined; the number of cows infected with *Str. agalactiae* was 91, a percentage of 15·2, the number of *Str. dysgalactiae* infections was 24, a percentage of 4·0, and Staphylococcal infections totalled 120—a percentage of 20·3.

Only six herds had *Str. agalactiae* infection levels over 20 per cent. These comprised 173 cows with an average incidence of 35·8 per cent. (62).

The incidence of *Staph. pyogenes* infections was surprisingly high in this series (120 cows out of 591 = 20·3 per cent.). Seven herds had over 20 per cent. of the cows carrying potentially pathogenic Staphs., an average incidence of 39·4 per cent. (86 cows) out of a total of 218.

Four herds, although troubled with clinical mastitis, had low levels of infection with organisms normally regarded as specifically connected with mastitis. Some of these herds had a variety of infections which can loosely be labelled as diphtheroid bacilli, unidentified streptococci and "micrococci."

DISCUSSION

The comparatively low level of *Str. agalactiae* infections in these herds was unexpected in the light of the generally accepted view of its widespread distribution. Furthermore, in similar investigations undertaken with S. J. Edwards and J. I. Taylor under the auspices of the Agricultural Research Council in the counties of Berkshire and Hampshire in 1944-45, 268 cows in seven herds were found to have a *Str. agalactiae* incidence of 59·3 per cent. (159 cows).

These differences pose a number of questions. Are there similar local variations in other parts of the country? It must be borne in mind that there is a difference in time between the results obtained in this area and those in Berkshire and Hampshire—so, alternatively, is it possible that the difference may be a reflection of the widespread use of penicillin in the interval? Unfortunately there are no figures available for this area prior to the introduction of penicillin therapy, so that the point must be speculative.

If there are other such local differences they may well explain the varying and in some cases disappointing results obtained with penicillin therapy. Owing to the lack of laboratory facilities, the majority of veterinary surgeons have to treat mastitis cases without adequate knowledge of the causal agent. In herds with a high *Str. agalactiae* incidence, such therapy is likely to yield satisfactory results, but in non-specific infections and in herds with a high staphylococcal incidence results may be disappointing with the usual doses of penicillin.

There is evidence from the work of Stableforth and his colleagues (1948)—in herds with a high incidence of *Str. agalactiae*—and

our own studies, Hughes (1948), that intensive therapy with penicillin may eradicate infection in a week in certain herds. However, the widespread application of such results must depend on a variety of conditions, not the least being a preponderance of *Str. agalactiae* infections.

The results of the herd tests in this series well illustrate the need for treating each herd as a separate individual problem. Thus, herd S.A. with a high incidence of *Str. agalactiae* yielded promptly to penicillin therapy. (The results in this herd and others will be published shortly.) Whereas herd S.B., with a very low incidence of specific infections, was a management problem. An alteration in milking methods and a general tightening up of technique has resulted in an improvement in mastitis control. Extensive therapy in such a herd would have been quite unjustifiable.

It would seem to be desirable to have a more adequate knowledge of the species and distribution of mastitis organisms in the country as a whole. Local differences such as this note suggests may not be really significant when considered on a national basis, but they may affect results in the area concerned. It is probable that many laboratories have this information but it has not been published. Certainly a national mastitis survey, even if based on only ten herds from each veterinary investigational centre, using an agreed technique, would yield results of considerable value in any future campaign against mastitis. Such a survey continued at two yearly intervals might well indicate what progress, if any, was being made with the more widespread use of modern methods of control and therapy.

Summary

A bacteriological examination of milks for mastitis organisms in the N.E. Midland area involving 19 herds with a total of 591 cows, detected 91 cows carrying *Str. agalactiae* (15·2 per cent.) and 120 cows carrying potentially pathogenic staphylococci (20·3 per cent.

These results are discussed in the light of the general opinion that the incidence of *Str. agalactiae* infections is high in the country as a whole, and the possible influence such local variations may have on the results following therapy. The need for a national mastitis survey is stressed.

During the course of this survey I have been indebted to Miss K. Bastable and Miss W. Crowley for their technical assistance and to Mr. R. Henson, N.D.D., for his help in sampling some of the herds. My thanks are due to Sir Jack Drummond, F.R.S., for permission to publish these results.

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PRESERVATION OF THE FERTILISING CAPACITY OF BULL SEMEN IN THE GENITAL TRACT OF THE COW

Professor M. Vandeplassche and Dr. F. Paredis, of the Centre for Artificial Insemination, Veterinary College, State University, Ghent, state (*Nature* (1948.), November 20th, p. 813), that the sperm of fertile bulls, diluted with sodium citrate-egg yolk diluent and inseminated deeply in the cervix and corpus uteri, may keep its fertilising capacity completely undamaged in the genital tract of the female at least up to 50 hours, even when this sperm has been stored three days in the refrigerator. In their experiments, which are still in progress, these workers inseminated heifers and cows with regular oestrous cycles several hours (six to twelve up to 18) before the expected oestrus, with a 1/50 dilution of bull semen, by rectal fixation of the cervix, an operation which sometimes presented much greater difficulty, more particularly in heifers, than when performed during the heat period. Computing that ovulation takes place ten hours after the end of heat in heifers and 16 hours in cows (Hammond), among ten out of 13 females in which the expected oestrus afterwards took place, two of them, inseminated about 48 hours before oestrus, returned in heat and were not pregnant. Six (four heifers and two cows) of the eight remaining animals, inseminated at shorter intervals, became pregnant, which corresponds to the conception rate for artificial insemination during the heat period. It was calculated that of these six animals, two were inseminated nearly 51 hours, three 45 hours and one about 40 hours before ovulation.

"Club" Practice in New Zealand

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Historical

For very many years there have been in New Zealand a few veterinary associations, each employing a veterinary surgeon wholetime. This is the summary of a remarkable decade of development in this form of practice.

During the recent war the profession gave much thought to ways and means of playing a more effective part in the drive for increased livestock food products. Both at Council meetings and at the Annual Conferences of the New Zealand Veterinary Association these matters were keenly discussed. At the same time, there was occurring a spectacular increase in the number of veterinary clubs or associations. In fact, the number of veterinary surgeons engaged whole-time in this form of practice has increased from about ten in 1939 to 55 to-day, with another 12 due to graduate and take up positions at the end of this year. It has been conservatively estimated that the present need is for about 100 practitioners, which should give a reasonable veterinary service in country districts. The older form of private practice is becoming confined to urban areas.

At its meeting in 1943, following the Presidential address of Dr. Hopkirk, now New Zealand Veterinary Liaison Officer in London, in which he surveyed the magnitude of the losses from stock disease, a resolution was passed urging the Minister of Agriculture to form an official committee "*made up of representatives of the Veterinary Association, Agricultural Department, existing Veterinary Clubs, Associations and Services, the University Senate and Primary Industry, with a veterinarian to be nominated by the Agriculture Department as chairman, to explore the situation and report to him on the best method of providing an adequate veterinary service for New Zealand.*"

A Ministerial Committee was shortly formed, composed of representatives of farmers' organisations, the University Senate, the Department of Agriculture, the veterinary clubs and the New Zealand Veterinary Association. There were five veterinarians and four laymen, with the Director of the Livestock Division of the Department of Agriculture (a veterinarian) as chairman.

It issued a report in 1945, and although there was a sharp difference of opinion over whether a veterinary school should be established in the country straight away or whether our man-power requirements should continue to be met by sending State-supported bursars to the Sydney Veterinary School, there was entire agreement over the desirability of extending the club system of veterinary service. It recommended that a central co-ordinating body be set up, which, in addition to regulating the conditions of service of the club practitioners, would be able to encourage, through the giving of a subsidy, the setting up of other clubs wherever there was need and local farmers were anxious for such a service. The money would be provided partly by the farmers' marketing boards and partly by a direct Government grant.

The Veterinary Services Act, 1946

The Annual Conference of the New Zealand Veterinary Association in 1946 had before it a draft of this proposed Act and the fullest opportunity was given for discussion. It was passed by Parliament during the following session and early last year the Veterinary Services Council, set up by the Act, held its first meeting. A few months later Mr. A. Leslie, F.R.C.V.S., was appointed the full-time executive officer of the Council.

The Council consists of ten members:—

(*a*) Three appointed as representatives of the N.Z. Government.
(*b*) Two representing the Dominion Federation of Farmers' Veterinary Services.
(*c*) Two appointed by the Dairy Board.
(*d*) One appointed by the Meat Producers' Board.
(*e*) One appointed by the Wool Board.
(*f*) One appointed by the N.Z. Veterinary Association.

At the present time there are four veterinarians on the Council.

It is stated that the functions of the Council shall be—"*to promote and encourage the provision of efficient veterinary services for owners of livestock in New Zealand, with a view to the maintenance and improvement of the health and general condition of livestock and the quality of produce derived from any livestock, and the increased production of such produce; and for those purposes to promote the training of a sufficient number of persons in veterinary science and their employment, when qualified, as veterinary surgeons.*" Among the particular activities to which its attention is directed by the Act are included the granting of sub-

sidies to new veterinary clubs or to ones established before the passing of the Act, the granting of bursaries to those wanting to become veterinary surgeons or to the veterinary schools themselves and the giving of financial assistance for post-graduate work.

Half the net estimated expenditure is contributed by the producers' boards in a specified proportion and hence is a direct contribution by the livestock industry, and half by way of Government subsidy.

Activities of the Council

Apart from functions associated with extension or statistical and survey work which it may later develop, it is clear that the Council has two major purposes:—

(1) *To control the supply of veterinarians,*

(2) *The regulation and encouragement of club practice through local veterinary associations.*

1. Supply of Veterinary Graduates

During the past few years 20 places have been reserved for New Zealanders at the Sydney Veterinary School and practically all have been filled by bursars selected and sent by the Government Committee which preceded the Veterinary Services Council or, in the case of a number of returned Servicemen, by the Rehabilitation Department. The terms of these bursaries are, I think, generous and include an allowance for text-books, provision for vacation training and payment for transport to and from New Zealand. There are obligations to repay any amount over £110 per year during the four years following graduation, and to serve in club practice or the Government veterinary service for five years after graduation.

The quality of the recent graduates has been high and it is the present belief of the Council that the training given at the Sydney School is very well suited to the training of practitioners for New Zealand conditions. Only a few outstanding British graduates, specialists in one field or another, are likely to be accepted from now onwards. There is, however, no reason why bursars should not be sent to one of the British veterinary schools if better training can be offered in this country.

2. Club Practice

I think it is clear from the information which has just come to me from New Zealand, that the Council has been most active in its main task during its first year. But it is emphasised by the Director that there is no intention of interfering with the local control of veterinary clubs, for the local farmers still find most of the money. It is the expressed policy of the Veterinary Services Council to preserve this local interest and to interfere as little as possible. The Council at present gives a subsidy of £400 a year per man employed.

The local management and financing of a whole-time practitioner service to the dairy farmers in New Zealand—and most clubs are in the intensive dairying districts of the North Island—is generally fairly easy because of the organisation already existing for the supplying of cream or milk to the network of butter or cheese factories which cover the country. The basis of payment by the farmer may either be upon the amount of milk or butter-fat he sends to his factory or upon a per-head-of-milking-cow basis.

There are, however, thriving veterinary associations in some sheep-farming and many mixed farming districts in both islands. The organisation of this type of club practice may present the local farmers with a less straightforward problem, but our experience shows that it can certainly be solved in a satisfactory manner if the will is there.

Functions of Regional Executive Councils

The Council has adopted a policy of encouraging the amalgamation of small adjacent clubs where it will be of mutual benefit to the clubs themselves and the veterinarians employed. These large incorporated clubs would naturally employ a number of veterinarians and a regional executive becomes the controlling and supervisory body. This will consist of one farmer representative for each veterinarian employed by the executive, together with a minority representation of its veterinary staff.

There already exist several of these fairly large regional schemes and there is provision for the executive to appoint chief regional veterinarians, and deputy-chief veterinarians where the area is extensive, who will be responsible for co-ordinating and supervising all the activities of the veterinarians employed in addition to doing some club work.

The regional executive has to provide the Council with copies of minutes of meetings "and with such other information as the Council may request from time to time."

Amongst its other duties are such things as the "provision of houses, pharmacies, offices, etc., for veterinary staff; . . . organisation of extension work for the district and animal husbandry and veterinary courses for farmers, farmers' organisations and schools; . . . the provision of clinical training for undergraduates and recently qualified graduates."

Salaries

The present salary scale approved by the Council and in operation is as follows:—

1st year after graduation	...	...	...	£550	per	annum.
2nd "	"	"	...	...	...	£600	"	"
3rd "	"	"	...	...	...	£700	"	"
4th "	"	"	...	...	...	£800	"	"

Above this level, increases are by promotion, although it is recommended that the minimum salary for a chief regional veterinarian be £1,000 and for a deputy chief regional veterinarian £950. At present the highest salaries paid are at the rate of £1,200 per annum.

In addition, there is a £15 a year instrument allowance, a car mileage allowance, one month's holiday on full pay, plus certain conference and library expenses. A superannuation scheme of the usual kind also operates.

[To make an unqualified comparison between the cost of living in Great Britain and New Zealand is difficult, but I am only reflecting the opinion of every New Zealander to whom I have recently spoken, which, indeed, corresponds with my own experience, when I say that the present cost of living is distinctly higher in this country.]

Further Developments

The Council's Chief Executive Officer writes saying that it is the intention this year to start refresher courses for club veterinary surgeons and that before long the Council hopes to be sending some of these men abroad to specialise.

A start has also been made in co-operating with the educational authorities in rural areas to bring knowledge about stock to agricultural students in country schools. The purpose is to make the rather uninteresting farming courses more useful and attractive. As he says, "without an informed farming public the club scheme lacks much of its benefit." For several years now, successful short winter courses for farmers have been held in several centres.

Conclusion

Although I cannot speak from direct personal experience of club practice in New Zealand, I have been in close touch with veterinary surgeons who are engaged in this work. I would say that this form of practice is providing the farmer with a comprehensive, lively and satisfactory veterinary service which is at the same time well suited to the conditions of the country. Its phenomenal development during the last decade is vivid proof of its success with farmer and veterinarian alike. It is clearly an opportunity which many within the profession in New Zealand have sought, to put into practice those ideals of preventive medicine and improved production which can only occur when there is close and continuing contact between farmer and veterinary surgeon. The main purpose of the Veterinary Services Act is to safeguard the service as far as possible from the danger of economic depression. It gives it the backing of the State while retaining its essential independence of Government control and preserving its close association with the farming community.

Undoubtedly much disease loss amongst stock is already being avoided and, at the same time, secure and satisfying employment is being provided for many veterinary graduates who desire general practice.

KABETE VETERINARY RESEARCH LABORATORY

We have recently received Bulletin No. 6 from the Kabete Veterinary Research Laboratory, containing papers presented to meetings held during the first six months of 1948.

The January meeting was fortunate enough to have Professor Bisschop to open the discussion on Mr. D. E. Faulkner's paper, "The Improvement of the Native Cattle of Kenya," and his views on this subject were deeply appreciated by the audience. We hope to publish a fuller reference to this paper in an early issue.

No meeting took place in February, but in March papers were presented by Mr. D. C. Edwards and Mr. R. W. Raymer, whilst the April and May staff meetings were concerned with a discussion on the vaccines produced by the laboratory. As a result a paper was prepared giving a description of the preparation, attributes and method of employment of the vaccines, which it is hoped will be of value to the field staff.

James Clark

A GREAT AND FORGOTTEN VETERINARIAN

[Dr. RUSSELL GREIG made a communication based on the following notes to a recent meeting of the Scottish Metropolitan Division and also to the meeting of the Royal (Dick) Veterinary College Alumnus Association held at Southport.]

If one should ask which were the clear outstanding figures among the remarkable folk that make up the foundation of the Edinburgh Veterinary School, I suppose that Dick and Gamgee and William Williams would be named the readiest. That would be right if celebrity is best expressed by material achievement, for they, each of them, founded a teaching school in Edinburgh; they were each endowed, too, with qualities of forcefulness, purposefulness and sweeping and sustained activity, alike in their professional and in the public affairs. Those are the sort of men whose careers provide the best kind of stuff for the historian, but there were others, and these, although maybe they cut less brave figures in the eye of history, nevertheless deeply influenced the development of our science. Such in Edinburgh were John Barlow and Thomas Walley; maybe to these should be added Finlay Dunn; but he who was far and away the greatest of them all is forgotten, worse than that, he is even unknown to the great mass of veterinarians to-day. This was James Clark, him whom Frederick Smith (the first among us to recognise his quality) calls "The great veterinary figure of the 18th century." Here Smith (*The Early History of Veterinary Literature*, Volume II) might well be quoted at some length.

"He [Clark] was a practitioner of Edinburgh though he visited London and observed the practice in the South and the class of disease most frequently met with.

"He must have received a good education, for he writes gracefully; not only is his language well selected but he possessed the power of expressing logically, clearly and mildly what he knew. . . . No remark of disparagement of others ever occurs, a feature very uncommon in his day, not only in veterinary but other branches of literature. Where he differs from another writer, he does so as a gentleman and not as a savage.

"We picture him as a mild man of philosophical disposition whose life had been spent in thinking out the numerous problems which the practice of his profession suggested; earnestly bent on leaving it wiser than he found it, and ever jealous of its good reputation.

"He was the first veterinarian in Britain to strike out a new line. . . . For the first time we meet with a man who had the courage to grapple with the hideous practices of his day, to reject nearly the whole of the old dogma and open new paths in the theory and practice of his art.

"Clark was a wide reader. Columella and Vegetius had been consulted, also the works of La Fosse, Bracken, Osmer, Buffon, Berenger, Pembroke, Lord Kaimes (on agriculture), Hales, and especially van Sweiten's Commentaries on the Aphorisms of Boerhaave. . . . We are accordingly prepared to learn that Clark exhibited a medical philosophy which hitherto had been absent in veterinary writers and practitioners.

"He wished to know the reason for everything and declined to accept matters on faith. We can well believe that this spirit increased as he got older, and that he endeavoured to satisfy his thirst for exactitude not only by reading but by careful clinical observation. The scientific portion of his education he doubtless gave himself.

"He must have been a strong personality to have so completely and successfully defied the practice of his time. He sweeps away with infinite disgust the old-fashioned method of referring to the recipe book for 'the cure' and says that the practitioner 'must first investigate the cause, the nature and various symptoms attending different diseases that have a resemblance to one another . . . and when he has carefully compared them together he will be able to make a proper distinction and in a great measure to determine the true seat of the disease.'

"He says that he will not waste time in refuting 'the ridiculous encomiums bestowed on the variety of recipes that are handed down with a *probatum est* as attestation of their particular virtues . . . many of the compositions are a confused jumble of ingredients calculated more for the apothecaries' profit than benefit to the patient.' . . . Clark, in fact, attacks in the most uncompromising manner the basis of medical and veterinary practice of his day.

"Throughout his work he is distinguished for his humanity to his patients; he inculcates kindness and gentleness; his medical treatment is soothing; his surgical is never violent . . . his pharmacy is clean, almost elegant. . . . He devotes a special chapter to the nursing of the sick, a subject rarely mentioned by any previous writer.

"He was a craftsman and writes as such. He says he is well aware of the storm of opposition which his work will create among the illiterate and prejudiced, but he begs for a fair hearing and says he appeals to nothing but facts and experimental enquiry.

"Had Clark never written on any other subject than the hygiene of the horse that work alone would have made him a great man.

"He lived for his profession. His whole life was devoted to improving his art, he looked for no praise or reward, he was indifferent to attack, but went steadily on his way."

Smith, certainly, was not a man given to overstatement in assessing worth in another (and I have reason to believe that his appreciation of Clark was not one whit too high).

There is much more that I could say in regard to the work of James Clark. I have made no mention of the fact that as early as 1788, when no organised veterinary teaching existed in this country, he conceived a system of State Veterinary Schools. In 1793, on the death of Sainbel; he was offered, but declined the Principalship of the London School, on the grounds that a school was about to be established in Edinburgh of which he had been offered the Directorship (a project which fell through because of political reasons). He published three text-books:—

"Observations on the Shoeing of Horses and Diseases of the Feet" (1770, 1775, 1782);

"Treatise on the Prevention of Diseases Incidental to Horses" (1778, 1790, 1802, 1805);

"First Lines of Veterinary Physiology and Pathology." Vol. I. (1806.)

These works were of such outstanding quality that Smith truly remarks: "Had all the previous writers been first-class men, James Clark of Edinburgh would still have been the giant of the period."

But much that I could say of his work is already on record. I want to tell you something of what I have discovered about the man himself, of his family and his domestic affairs, for Frederick Smith deplored the fact that nothing was known of Clark's history (not even the date of his birth or death). Indeed, he has to admit that, other than what can be deduced from his writings, nothing was known of this really great man beyond that he was a farrier to the King and that (according to Bracy Clark) he kept a kind of posting establishment in Edinburgh.*

Such information as I have I shall set out as briefly and concisely as possible.

Clark was born in 1732 and carried on the business of farrier in the Canongate of Edinburgh, probably from about the late 1750's or early 1760's onwards. He first appears in Aitcheson's Directory as "Farrier in South Back Canongate" in 1774. His premises were situated at the foot of Chessell's Court.

His abilities and character were recognised in his receiving a Commission as King's Farrier (January 31st, 1776—registered September 25th, 1776) and in his being made a Burgess of the City (November 2nd, 1786).

In Martinmas, 1786, he acquired the lands of Clockmiln, later called Belleville, but these were still later renamed Comely Garden, situated in what is now the King's Park, and in 1804 he seems to have acquired further adjacent land; in all about 28 acres. There he had a dwellinghouse, lawn and garden which doubtless would represent a pleasant country dwelling.

I can find no mention of his wife; the evidence suggests that she died comparatively early, but his family consisted of two sons and three daughters.

His (I think eldest) son James was a surgeon and was also made a Burgess (1792). He, however, died between 1792 and 1804, since there is mention of this in his father's will which was dated July 25th in the latter year.

John, the other son, was a farmer in Mayfield (presumably the farm of that name in the parish of Dalkeith). He married in 1804.

James Clark's eldest daughter, Emelia, became the wife of John Bannatyne of Castle Bank.

His second daughter, Elizabeth, married Captain James Watson, of the Royal Navy, while his youngest daughter, Mary, so far as we know remained unmarried.

Captain and Mrs. James Watson appear to have had six children of whom the eldest was John Watson. By his will (dated July 25th, 1804, registered October 12th, 1808) James Clark bequeathed his silver watches to his grandson, John, then a boy of 16 years old. His pinchbeck watch went to John's mother, Elizabeth.

He died, aged 76, at Comely Garden on July 29th, 1808, and was buried in the Canongate Kirkyard.

So far as I can ascertain, none of his descendants is alive. His

*This is right; the premises were situated in the South Back of the Canongate.

Sir John Watson Gordon

Grandson of James Clark: President of the Royal Scottish Academy, 1850.

[Publication of the reproduction of this self-portrait is by courtesy of the Royal Scottish Academy].

grandson, John Watson, to whom reference has been made, became the celebrated Scottish portrait painter, John Watson Gordon; in 1826 he assumed the name Gordon to distinguish him from other artists named Watson. He was later Knighted and in 1850 became President of the Royal Scottish Academy and was appointed "limner to Her Majesty for Scotland" as his grandfather had been appointed farrier to the King for Scotland those many years before.

James Clark's grave in the Canongate Kirkyard (east side) is situated in front of a dividing wall which is in a state of advanced dilapidation. A marble scroll (now fallen down) had been fixed to the wall but the inscription on it was quite indecipherable.

* * * * *

A "James Clark Memorial Fund" has been brought into being with the object of putting Clark's grave into a condition of decency. It is also proposed to affix a simple bronze plaque carrying a short inscription. Subscriptions can be sent to the treasurer of the fund, Mr. A. R. Milroy, Moredun Institute, Animal Diseases Research Association, Gilmerton, Edinburgh, 9.

Dr. J. T. Edwards, on reading Dr. Russell Greig's notes, wrote the following letter, which we have pleasure in publishing at the request of the former, with Dr. Russell Greig's permission.

Southport,

September 11th, 1948.

My dear Russell Greig,

I have read the attached notes with the greatest interest. The new material you have discovered in connection with James Clark is of the utmost historical importance.

I have not studied any of Clark's actual writings and so I am unable to confirm Bradley's penetrating judgment (History of the Edinburgh Veterinary College) that on reading into his writings there was something to be discerned in them which gave one the impression that Clark did not possess the qualities needed in a pioneer. I have read Smith's summing up of the man several times, together with the many references to him in Smith's biographies of other men, particularly of Coleman, and all leads to confirm me in accepting Bradley's judgment. In sum, Clark was predominantly an intellectual, of the finest type, and, as such, he was neither emotionally nor pragmatically fitted to undertake leadership in launching new enterprise. But, as has been well stated recently by the social psychologist, he was well fitted (like Voltaire and Rousseau) to pave the way for revolution, which in the way of the ordinary "anatomy of revolution" is carried on—after the preparation of the intellectuals—by bolder, cruder spirits (like Robespierre, Danton and others).

Smith is probably right when, therefore, he designates Clark as the "father of modern veterinary hygiene"; and all that he (Clark) so lucidly expounded as hygienist upon ventilation of stables was afterwards unscrupulously exploited (without acknowledgment to Clark) by Coleman, during the latter's long occupancy of the post of first head of the veterinary services of the Army. The system applied was revolutionary and led to an enormous saving of horses for the Army. Until Smith carried out his classic historical researches, it was Coleman who (very wrongly) got full credit for that saving—a saving as great as any accomplished by modern means of immunisation, etc., which obtain glamour in the eyes of the public.

There is a great deal more I would like to add, but if I began to do it I am afraid I would soon be wearying you with a memoir of my own. There is no doubt that when Clark was consulted by the Odiham Society (in 1790, see Arthur Young's *Annals of Agriculture* for that year in R.A.S.E. Library) he was given his chance, if he had been bold enough to take it, to open up veterinary education in this country, but he was weak in not grasping that chance, putting forward the excuse or pretext that he wished to comply with the movement afoot in Scotland to open a school there. What Smith does not sufficiently stress in all his writings is the background of contemporary events. First, the opening of hostilities against France in 1793 greatly changed the whole political background. Secondly, the natural disappearance of cattle plague (rinderpest) towards the end of the 18th century—the emergency which had caused the rising Societies to move towards instituting veterinary education—brought about a lack of interest, for long years, in everything but "horse doctoring," which rapidly rose in importance with the progress of the Industrial Revolution. Clark was a "hygienist" (though not an "epizootiologist" as Thomas Bates, in 1715, had already proved himself to be *par excellence*) and not a "horse doctor" (or clinician) as Dick was later to prove himself to be (and as he was) and as Coleman pretended (most successfully) to be (and as he was *not*). And it was merely the "horse doctor" that was wanted—or rather opportunities became abundant for anyone who professed to be a horse doctor to persuade the public that he was one. Clark, being an intellectual, was too honest (and too timid) to indulge in the necessary aggressive persuasion. Dick had overweening self-confidence, forthcoming from a militant Calvinistic emotional make-up, an intellectual development restrained within severe bounds, and great experience of his subjects, namely horses. Coleman had overweening self-confidence on the other hand, forthcoming from an absence of spiritual development, deep political cunning, and great experience in dealing with men. In comparing Clark (who "failed") with others (who "succeeded") the proper comparisons are with Coleman and Dick, and not with Williams and Gamgee, who came later, when the background had greatly changed. You are not right, I venture to say, in comparing Dick with either of these two men for such qualities as "sustained activity." Dick certainly had such a quality, but John Gamgee, who was truly a genius, as Smith rightly concludes, was incapable of "sustained activity"; while Williams had the failings of my own countrymen (the Welsh—for he was a characteristic Welshman) in being spiritually cast at too high a level for his environment, and so while being high spirited and zealous, he was far too hypersensitive to pass by irritating trivialities.

If I may, I would like to subscribe a guinea to Clark's memorial fund, both as a mark of my appreciation of a very FINE (though not "GREAT") man and also as a token of my real interest in the splendid contribution you have succeeded in making to veterinary history.

Yours sincerely,
(Sgd.) J. T. EDWARDS.

ABSTRACTS

[The Placentome of the Cow. KINGMAN, H. E. (1948.) *Amer. J. vet. Res.* **9.** 125-131.]

The author suggests that too little attention has been given to the physiology and pathology of the placentome, in such conditions as retained foetal membranes, abortion, failure of implantation, etc.

The development of the placentome is characterised by six phases.

Phase I. The preparation of the uterus for reception of the fertilised ovum (one to 50 days). This was studied by the injection of stilboestrol and progesterone in preovulatory calves. The injection of 160 mg. stilboestrol over a period of 14 days produced the usual signs of oestrus, including a flow of mucus. In one calf slaughtered two days after the last injection, the caruncles, *i.e.*, the small eminences on the surface of the endometrium from which the placentome develops, were found to be prominent and resembled those of an adult.

The subcutaneous injection of 125 mg. progesterone over 25 days produced marked increase in the size of the uterine horn.

Phase II. The period of implantation (50 to 90 days). This is a critical period. Oestrogenic influence is superseded by that of progesterone. First appearance of the placentome in the region of the embryo. By the 19th day of gestation union has been established in the region of the embryo. The life of the foetus is easily terminated in this phase.

Phase III. Further development of the placentomes (90 to 230 days). Appearance of placentomes throughout the horns. Communication between the maternal and foetal tissues occurs, at about the 90th day of gestation. The entirely different and characteristic appearance of placentome tissue is now apparent.

Phase IV. Ripening of the genital tract and preparation for parturition (230 to 285 days). The mechanisms involved in this phase are obscure, but interference with the blood supply of the foetus and the fact that the endocrine function of the placenta is on the wane appear to be the main factors inducing the onset of parturition.

Phase V. The changes at parturition. Immediate death of foetal placenta occurs. Haemorrhage takes place uniformly between the maternal and foetal villi, which is of the utmost importance in ensuring the separation of foetal and maternal tissues. This is also facilitated by the traction set up by the separated portion of the foetal membranes.

Phase VI. Changes following parturition until the genital tract returns to normal. These affect the epithelial cells of the surface, the endometrial glands, the musculature and the lamina propria. If any one of these is interfered with, retention of foetal membranes is likely to ensue. Should this occur, separation must then take place by haemolysis and liquefaction.

The author suggests that retained foetal membranes should not be removed as a matter of routine nor be subjected to manual treatment for at least 72 hours. Indeed, the presence of the membranes protects the underlying structures, and it is doubtful if their removal facilitates the involutary processes. Sulpha drugs and/or penicillin should be given. P. K.

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[On the Inheritance of Metatarsal Inclination in Ayrshire Cattle. HABEL, R. E. (1948.) *Amer. J. vet. Res.* **9.** 131-139.]

A review is made of the literature dealing with stance and conformation of cattle, especially the relative positioning of the hind limb and angulation of stifle, hock and fetlock joints. Various aspects of hind limb conformation in relation to pathological and physiological processes, breeding and environment are discussed, with special reference to the hock joint and digits.

Reference points for making the measurements were marked with chalk. Point I, Anterior border of trochanter major femoris (acetabulum). Point 2, Lateral tuberosity at proximal end of metatarsal bone. Point 3, Proximal attachment of the deep lateral ligament of fetlock. The standard position of the limb was achieved by dropping a plumb line from Point I to intersect the coronet at its dorsal surface. In this position the inclination of the metatarsus was measured in degrees from the horizontal.

For 244 subjects of varying ages the mean angle was 78·7 degrees. Regression of the metatarsal inclination with age is discussed. The study included a correlation among maternal half sisters, paternal half sisters, daughter and dam, full sisters, and herd members not closely related. When analysed statistically, the results showed that the characteristic of metatarsal inclination is heritable and determined by multiple factor inheritance. P. K.

REVIEW

["The Physiology of Domestic Animals." By H. H. DUKES (with HEWITT, E. A. & ASDELL, S. A.), 6th Edition (1947.) Pp.xii+816, with 184 illustrations. Price 41s. net. New York: Comstock Publishing Co.; London (English Agents): Baillière, Tindall & Cox, 7 & 8, Henrietta Street, W.C.2.]

It is often said that the bulk of physiological teaching in veterinary schools must be based on conventional mammalian physiology owing to the paucity of data available for the large domestic animals. Professor Dukes, as a teacher of experience, must be well aware of this problem, and his book is an interesting guide to its solution.

The sixth edition has grown by about 100 pages, and additions can be found in most sections. The chapters on blood, ruminant digestion, carbohydrate metabolism and the male generative organs are considerably expanded, while a new chapter dealing with the important subject of growth has been included and it is gratifying to see that a considerable amount of the new data deals with results obtained from farm animals. Greater emphasis is placed upon electrocardiograms in the chapter on the heart and the text is illustrated with normal electrocardiograms of the horse; thus the policy of illustrating physiological effects with tracings taken from the farm animals has been extended still further, and, in addition, no opportunity of presenting comparative data is lost. No one is ever wholly satisfied with any text book and it is disappointing that the important subject of egg production is not given greater prominence, while the nutritional role of the placenta is another subject that might well be developed in later editions. The fact that six editions have appeared since 1933 shows that Professor Dukes is anxious to keep this book up to date, and it is to be hoped that he will not tire in his task, for this book is the only physiology of the domestic animals in the English language which serves as a reference book as well as catering for the needs of veterinary students. Each edition that appears gets one stage nearer its goal and for this reason each edition can more accurately be described as unique than the previous one and consequently more valuable.

THE BRITISH ASSOCIATION

APPOINTMENTS FOR 1949

Next year the British Association for the Advancement of Science will meet at Newcastle-on-Tyne from August 31st to September 7th. The following are the appointments to the various offices in the association:—

President, Sir John Russell, F.R.S.; General Treasurer, Mr. M. G. Bennett; General Secretaries, Dr. Edward Hindle, F.R.S., Sir Richard Southwell, F.R.S.

Presidents of Sections.—Sir Harold Spenser Jones, F.R.S. (Physics and Mathematics); Professor Sir Alfred Egerton, F.R.S. (Chemistry); Professor W. J. Pugh (Geology); Professor A. C. Hardy, F.R.S. (Zoology); Professor L. Dudley Stamp (Geography); Professor Sir Alexander Gray (Economics); Sir Arthur Fleming (Engineering); Mr. M. C. Burkitt (Anthropology and Archaeology); Professor R. A. Peters, F.R.S. (Physiology); Professor Godfrey H. Thomson (Psychology); Professor Lily Newton (Botany); Sir Fred Clarke (Education); Professor N. M. Comber (Agriculture). Chairman of the Local Executive Committee, Lord Eustace Percy.

The Lord Mayor of Newcastle has issued an appeal for a local fund of £4,000, and over 200 local volunteers are already making preparations for what is expected to be one of the largest meetings in the history of the British Association.

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The Fur Record intimates that the Fur Breeders Sub-Group Committee of the Fur Trade Export Group has decided to approach the Royal Veterinary College, London, and the Royal Veterinary College, Edinburgh, with a view to seeking to establish a service of advice on diets and other problems on which breeders might require information from time to time.

CLINICAL COMMUNICATION

The Use of Advancement Flaps in Entropion

A. C. DIXON, M.R.C.V.S.,
Berkhamsted

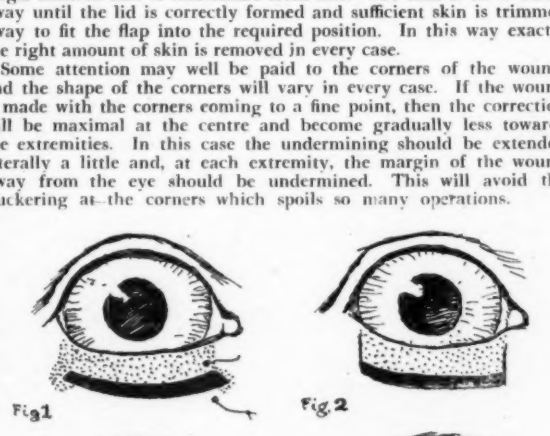
Entropion is a common condition in dogs and often calls for surgical interference. The usual operation, skilfully carried out, leads to great improvement and it is one which naturally appeals to those surgeons who have developed some degree of operative technique. During the last two years I have used several modifications of the usual method with very gratifying results. In all cases the principal feature has been the splitting of the lid to allow the skin to be moved at will to any new position the case may require.

Before describing the method there is a complication which should be mentioned, as failure to attend to this may lead to disappointing results. The long-standing inflammation and continued presence of discharge leads to swelling of the lids and often to infection. This frequently involves the lachrymal ducts and they become blocked. If a few drops of dilute methylene blue, placed in the eye, cannot be recovered from the nostril within 30 to 60 seconds, then the ducts should be cleared. The operation is postponed until the ducts are known to be functioning normally and any swelling due to their obstruction has subsided. Such deformity as remains is then due to entropion alone and an accurate assessment can be made of the amount of correction required.

The incision is made in the eyelid and rather further away from the margin of the lid than in the classical operation. Only a narrow strip of skin need be removed. Having removed this, the margin of the wound nearest to the palpebral fissure is gently raised with forceps and the whole of the skin between the wound and the margin of the lid is undermined. A very narrow strip right on the margin of the lid is left intact to ensure a blood supply. It will be noticed that in this region, there is very little subcutaneous fat. There is, however, always some and the blood vessels of the skin are contained in it. It is quite essential that this fat is left attached to the skin and raised with the flap. Flaps raised without fat may not survive. Those with fat remain viable.

If the wound is now closed with sutures the principal feature of the operation will appear. The skin of the lid slides away from the palpebral fissure over the underlying structures to its new position. Consequently the extreme edge of the lid is rolled outward. This is different from the old operation, the effect of which is to make a bend in the lid as near the margin as possible. The sliding of the skin gives a much more accurate correction than was formerly possible. In practice it is often useful to make a single incision and to undermine from this. The skin is then drawn away until the lid is correctly formed and sufficient skin is trimmed away to fit the flap into the required position. In this way exactly the right amount of skin is removed in every case.

Some attention may well be paid to the corners of the wound, and the shape of the corners will vary in every case. If the wound is made with the corners coming to a fine point, then the correction will be maximal at the centre and become gradually less towards the extremities. In this case the undermining should be extended laterally a little and, at each extremity, the margin of the wound away from the eye should be undermined. This will avoid the puckering at the corners which spoils so many operations.



(*a*) The black areas represent skin removed.
(*b*) The shaded areas represent skin undermined.

If a moderate degree of correction is required all along the lid then an incision such as that shown in Fig. 1 may be used. This gives a uniform correction all along, which diminishes gradually at the extremities. In closing this wound the upper point at the extremity is drawn down to the longer curve as shown in the figure, resulting in a single curved wound without kinks. This incision gives a nice result with less post-operative discomfort than usual, because lateral stretching is avoided, the length of the short inner curve, together with the two truncated ends, being made equal to the longer, outer curve.

If the deformity is such as to require correction along the whole lid and terminating abruptly at the extremities, then an incision such as Fig. 2 may be used. Here the flap is separated on three sides, the lateral parts of the incision running almost up to the margin of the lid. After undermining, the flap is drawn down to its new position and fixed with sutures. Here again there is no undue stretching and wounds heal well and are left alone.

In a few cases it will be seen that after the lid has been adjusted to a new position there is some tension, usually in the lower lid towards the outer canthus. This may lead to out-turning of a small portion of the lid. This can be relieved by a V-Y incision. This consists of a "V"-shaped incision with the point of the "V" away from the eye. The skin between the two arms is undermined and the wound closed in the form of a "Y." The effect of this is that the skin which was between the long arms of the "V" is now between the short arms of the "Y" and the remainder is pushed forwards towards the eye where it relieves the tension. (Fig. 3.)

There is a further condition which can be corrected in a rather different way. It often happens that a marked in-turning occurs towards the inner canthus of the lower lid, usually involving the punctum, together with an out-turning of the central part of the same lid. This can be corrected with a rotation flap. A curved incision is made as shown in Fig. 4. The only skin removed is that shown by the two small black triangles at either end. It is important to note that the curve is sharp below the in-turned part of the lid and nearly straight beneath the out-turned part. The flap is undermined as usual. Closure of this wound is commenced at the inner canthus where the apex of the small triangle (*i.e.*, the angle nearest to the eye) is drawn down to the long, outer curve. This disposes of two sides of the triangle and the whole flap is now rotated outwards until the remaining third side of the triangle can be brought up to the outer curve, where it is fixed with sutures This rolls the punctum away from the eyeball and corrects the deformity here. The edge of the flap is now stitched into the outer curve, but, since the flap has been rotated outwards, a wide flap is being sown into a narrow opening. The flap is, in fact, acting as a sort of wedge which pushes the margin of the lid away from the outer curve. This corrects the out-turning at the centre of the the lid. When this has been done it will be found that the triangle at the outer canthus has disappeared and is represented by a slit which is closed by a suture. A little trimming is sometimes required to make this part fit snugly.

All the above procedures can be carried out quite quickly. They take a little time to plan out, but the actual operation takes very little longer than the older method. The correction of deformity is much more accurate and the surgeon can tell, as he goes along, just what the result will be. There is a minimum of tension on the wound and this reduces post-operative discomfort. This is pleasanter for the patient and he tends to leave wounds alone; consequently they heal better. Quite apart from this, the handling of these miniature flaps gives the surgeon useful experience in the technique under ideal conditions. The small flaps survive and, in entropion operations, I have never lost a flap. Furthermore, one is working with tissues not damaged by trauma. When the technique has been mastered it may be applied to the repair of injuries anywhere in the body. As a student I was taught never to undermine skin. I think this teaching is sound for the student. With a little experience, however, one finds that skin can be undermined to a limited degree and as technique improves one can undermine further and further. Most surgeons know just how far they, personally, can go in this respect. It is a rule, however, that in no case should a flap be raised with a length base ratio of more than one to one.

Weekly Wisdom

No doubt the old adventurers enjoyed in a high degree the peculiar satisfaction that people get from any round trip, whether it be globe-trotting on the grand scale or just a long walk. There is, after all, nothing more characteristically human than moving in circles.—"The Times."

MEMOIR

Major Arthur Bowman Mattinson, O.B.E., M.C., M.A. (Manc.), F.R.C.V.S., D.V.S.M. (Vict.)

It is never an easy task adequately to fulfil the sad and responsible duty of preparing an obituary notice, but when the deceased has been a friend and colleague in so many matters appertaining to the profession for a period of over 40 years the difficulties are greatly increased; one hardly knows what to leave out to keep the appreciation within reasonable limits.

Arthur Bowman Mattinson, who was born in Northern Ireland 68 years ago, was educated at the Hutton Grammar School before entering the New College, Edinburgh, where he qualified in 1902. In 1910 he was awarded the Fellowship Diploma of the Royal College, his thesis being "The Eradication of Bovine Tuberculosis." In 1911 he obtained the Diploma in Veterinary State Medicine granted by the Victoria University of Manchester. He was a Master of Arts, also of Manchester University. In 1922 he was appointed to the Chair of Materia Medica and was Professor-in-Charge of the Out-patients' Clinic at the Royal Veterinary College, London. He resigned from this position to take up an appointment as Lecturer in Systematic Veterinary Surgery and Obstetrics at the University of Liverpool Veterinary School; here he also lectured on Horse Shoeing and Therapeutics. He was held in high esteem by his Liverpool students and since his resignation was ever ready to help any of his former students when difficulties arose during the course of their practices. From 1919 to 1922 he was Examiner in Stable Management and Shoeing to the R.C.V.S.

His military career started when he was still a student in Edinburgh, for in 1900 he joined the ranks of the Westmorland and Cumberland Yeomanry and saw service in South Africa during the Boer War. From 1911 to 1914 he was veterinary officer in charge of troops Western Command. Mobilised on August 5th, 1914, he served in the Great War until 1922. He was veterinary officer in charge of the 29th Brigade R.F.A., 4th Division and O.C. No. 4 Mobile Veterinary Section, the first to be organised as an advanced veterinary hospital. Later he was A.D.V.S., 4th Division and in 1915 was selected for special duty, advising and directing measures against outbreaks of epizootic diseases in western mule depots. He organised, formed and commanded the Army School of Farriery and was later Officer Commanding Nos. 1 and 2 Veterinary Hospitals in the Aldershot Command. After the war he became veterinary officer in charge of the 1st Brigade R.A.M.R. and was engaged in purchasing remounts in Ireland, 1921-22. He was appointed D.A.D.V.S., 55th (West Lancashire) Division in 1924 on transfer from the reserve of officers to the T.A. During the war he was twice mentioned in despatches and received the O.B.E. and the M.C.

After such a long and distinguished military career one would have expected him to retire from military life, but during the last war he again donned uniform and became Platoon Commander in the Home Guard. Mattinson's allegiance to King and country has, indeed, been great.

His civilian activities were no less distinguished than his academic and military. After seeing practice in Liverpool and Southport he took over a practice in Preston which he increased extensively and carried on most successfully for a number of years amongst the farmers of one of the foremost dairying districts in the country. Up to the time of his death he was an I.V.I. of the Ministry of Agriculture and Fisheries, also Lecturer on Veterinary Science in the Lancashire County Institute of Agriculture. He was Veterinary Surgeon in charge of the County Council farm at Hutton and the Lancashire County Constabulary horses.

Our colleague was an active member of the Lancashire Veterinary Association up to his death and served as President some eight or ten years ago. He became a Member of Council, R.C.V.S., in 1933. For a time he was Chairman of the Finance and General Purposes Committee and was unanimously elected President in June, 1945. He filled this office with great distinction. He had an exacting year which entailed almost weekly attendance in London, for it was during his year of office that preliminary negotiations were in progress with the Ministry regarding the draft of the Veterinary Surgeons Act. In addition, Dr. Bullock's health broke down with his untimely and lamentable death early in 1946. There is little doubt but that his service to his profession during this time undermined our President's health before he had time to recover from the death of his wife which occurred some short time previously.

In addition to the above activities he found time to fulfil some public services, such as Rural District Councillor, School Manager, Local Representative of Charity Commissioners, etc.

A man with such a record of activities, often full to overflowing, died as he would have wished—a sudden lapse into unconsciousness after a normal day's work, and from which he never recovered. His death is another loss to our profession. It can with truth be said that by his example and exertions he left the profession in a better state than he found it.

To his son and daughters who are left to mourn his death we extend our deepest sympathy. May it be some little consolation to them to know that their personal loss is shared by the profession.

J. H.

The funeral took place at the Carleton Crematorium, Blackpool, on Wednesday, November 24th. In addition to family mourners and farmers, there were representatives from the Lancashire Farm Institute, Hutton. Members of the profession who attended were Major H. Sumner, representing the President and Council, R.C.V.S.; Mr. E. R. Callender, representing the President and Council, N.V.M.A., and Chief Veterinary Officer, Ministry of Agriculture and Fisheries; Mr. A. C. Shuttleworth, representing the Board of Veterinary Studies, Liverpool University; Messrs. T. E. Hey and J. W. Wilson, representing the President and members of the Lancashire Veterinary Association; Messrs. Bee, Clunie, Finch and Marginson.

QUESTIONS IN PARLIAMENT

Ministry of Agriculture (Staff)

Sir W. Smithers (November 29th) asked the Minister of Agriculture if he will give in tabular form and in convenient salary and wage categories the number of staff, industrial and otherwise, in his employ at the latest available date.

Mr. G. Brown: The following statement sets out the position on October 1st, 1948:—

Ministry of Agriculture and Fisheries

—	Number of staff employed on salary ranges					
	Up to £500	Over £500 to £1,000	Over £1,000 to £1,500	Over £1,500 to £2,000	Over £2,000 to £2,500	Over £2,500
1. Non-industrial staff of the Ministry (including Kew Gardens but excluding C.A.E.C. staffs)	2,022	2,211	427	97	9	1
2. Non-industrial staff of the County Agricultural Executive Committees	2,650	463	1	1	—	—
Total, Non-industrial Staff ...	4,672	2,674	428	98	9	1

Notes.—(1) Industrial staff attached to County Agricultural Executive Committees are locally employed, and are not included in these figures.

(2) The table also includes the numbers of weekly wage paid staff.

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Horses and Ponies (Feeding-stuffs)

Sir T. Moore (November 29th) asked the Minister of Food whether, in view of the improved position with regard to the importation of feeding-stuffs, he will arrange for an early increase in the present inadequate rations for working horses and ponies.

Mr. Strachey: I have no reason to believe that the present rations for working horses are inadequate.

Sir T. Moore: Surely, the right hon. Gentleman must be aware that horses and ponies cannot do their normal work on their present-day issues of feeding-stuffs. One has only to look around the countryside and towns to see evidence of this.

. . . . .

Farm Water Supplies (Pipes)

Mr. Lambert (November 29th) asked the Minister of Supply

whether he is aware that the long time taken to deliver water pipes is holding up schemes, approved by the Ministry of Agriculture, to improve the supply of water on farms; and whether he will take steps to reduce the time taken to deliver these pipes.

THE JOINT PARLIAMENTARY SECRETARY TO THE MINISTRY OF SUPPLY (Mr. JOHN FREEMAN): There is at present insufficient capacity to meet the demand for this type of pipe. Additional manufacturing plant is being installed and delays in delivery should be reduced when it comes into production early next year.

Mr. LAMBERT: Is the hon. Gentleman aware that the long delay in supplying these pipes puts difficulties in the way of the production of milk, especially clean milk, and can he give any indication when supplies will become easier?

Mr. FREEMAN: Yes, Sir. I have just said early next year.

RESEARCH INSTITUTES (STAFF RECRUITMENT)

Sir W. WAKEFIELD (November 30th) asked the Chancellor of the Exchequer whether he is aware that the efficiency of the various research institutes is still diminished by reason of the difficulties and delays which ensue as a result of the obligation imposed upon them to recruit their scientific staff centrally; and whether, in view of the specialised requirements of these institutes and the important scientific work which they are doing, he will arrange for an early modification of the present procedure.

Sir S. CRIPPS: I cannot agree that central recruitment is diminishing the efficiency of research institutes. This system was introduced in accordance with the White Paper on the Scientific Civil Service (Command 6679) for the express purpose of keeping up high standards throughout the Scientific Civil Service; and the scarcity of scientists throughout the country makes it the more important to retain the main principles of the system.

In the light of experience it has now been arranged that recruitment during 1949 shall be continuous, so that candidates may apply and be interviewed at times convenient to them. They will in many cases, if successful, take up their appointment immediately after interview.

. . . . .

ANIMAL EXPERIMENTS

Mr. VIANT (November 30th) asked the Secretary of State for the Home Department how many places were registered for experiments on living animals during the year 1947, under the Cruelty to Animals Act, 1876; how many of the experiments were performed on horses, asses, and mules, with and without anaesthetics; and how many experiments were performed for the purpose of cancer research, with and without anaesthetics.

Mr. EDE: The number of registered places in 1947 was 459, of which 30 were new registrations. The following table gives the other information for which my hon. Friend asks:

Experiments performed	With anaesthetics	Without anaesthetics
On horses, asses and mules ...	43	213
For cancer research	8,619	23,305

NOTES AND NEWS

Diary of Events

Dec. 15th.—N.V.M.A. Editorial Executive Sub-committee, at 36, Gordon Square, 2.30 p.m

Dec. 15th.—Meeting of the Section of Comparative Medicine, Royal Society of Medicine, at 1, Wimpole Street, W.1, 5 p.m.

Dec. 17th.—Meeting of the Association of Veterinary Teachers and Research Workers (Northern Region), at Runcorn (Evans' Biological Laboratories), 11 a.m.

Dec. 17th.—General Meeing of North-Eastern V.M.A., King's College, Newcastle-on-Tyne (Forestry Lecture Room), 2 p.m.

Dec. 22nd.—Meeting of Lancashire Veterinary Association at Manchester (The Midland Hotel), 2.30 p.m.

Jan. 5th, 6th and 7th, 1949.—Quarterly Meetings of Council and Committees, N.V.M.A., in London.

Jan. 5th.—Meeting of the Southern Counties Division, N.V.M.A., at Salisbury (Red Lion Hotel), 2.30 p.m.

Jan. 7th.—General Meeting of Association of Veterinary Teachers and Research Workers (Southern Region), at Royal Veterinary College, N.W.1, 11.30 a.m.

Jan. 10th to 13th, 1949.—R.C.V.S. Council and Committees, 10, Red Lion Square, London, W.C.1.

Jan. 21st.—157th Annual Ball of R.V.C., at Grosvenor House,

XIV International Veterinary Congress

PRELIMINARY ANNOUNCEMENT

Object.—The object of the International Veterinary Congresses is the advancement of the science and practice of Veterinary Medicine and Surgery. To this end discussions are arranged on what are considered to be the most important scientific and practical questions of the day, with a view to their solution by a mutual interchange of opinions and personal experience.

Programme.—As it is considered that the present world food situation is the most important scientific and practical question of the day, the Congress programme has been based on this theme. Every morning there will be a plenary session at which a paper will be presented by some person of world reputation on the veterinary profession's contribution to some aspect of world food production. Sectional meetings will be held in the afternoons. The programme for these is designed to cover a wide range of subjects, and whatever the speciality of any member of the Congress he should find papers of direct interest to him.

EXECUTIVE COMMITTEE

The President	Sir Daniel Cabot
Vice-President	Professor J. B. Buxton
Honorary Secretary ...	Dr. W. R. Wooldridge
Honorary Treasurer ...	Mr. G. N. Gould
General Secretary ...	Mr. W. G. R. Oates

Organising Secretary ... Lt.-Col. J. A. Gordon Roberts to whom all communications should be sent at 10, Red Lion Square, London, W.C.1.

Administration: 1. *Place of Meeting.*—The meetings will take place at the Central Hall, Westminster, and in Church House, Westminster, London, S.W.1.

2. *Opening Date.*—The Congress is under the Patronage of His Majesty the King, and it is hoped that His Royal Highness the Duke of Gloucester, who is the President of the Royal Veterinary College and Hospital of London, will be able to open the Congress.

The first session will take place at 10.00 hours on Monday, August 8th, 1949, and the Congress will last until Saturday, August 13th inclusive. Registration of members will take place at Central Hall on Sunday, August 7th, from 2 p.m. (1400 hours) onwards. Certain social functions will take place on the evening of Sunday, August 7th.

A detailed programme showing the times at which the General and Sectional meetings will take place, giving the names of speakers and titles of papers, will be published in the official programme to be issued later.

3. *Social Functions.*—Many official and other social functions will be held during the week of the Congress, at which delegates will be able to meet their confrères from other countries. Details of these functions will also be notified in the official programme.

4. *Excursions.*—During the week August 15th to 20th visits will be arranged to places of interest to veterinarians such as: Veterinary Research Stations, Veterinary Colleges, abattoirs, breeding and racing establishments, etc. Every effort will be made to show, and to give information about, the latest developments in veterinary research.

Tours will also be arranged to places of interest and beauty spots in the British Isles.

5. *Exhibition.*—An exhibition of the latest instruments, appliances, laboratory equipment, drugs, disinfectants, antiseptics, books, etc., will be arranged in premises convenient to the Central Hall. Admission to members will be free.

6. *Membership.*—Official invitations have been issued by His Majesty's Government to Foreign, Commonwealth and Colonial Governments, requesting the sending of delegates to the Congress. Representation has been invited not only from Government veterinary departments, but also from universities, veterinary schools and other interested bodies in every country.

Application for membership should be made direct to the Organising Secretary, 10, Red Lion Square, London, W.C.1. All applications should be accompanied by a remittance for the exact amount of the subscription. Cheques, money orders, etc., should be made payable to the "XIV International Veterinary Congress." Names, titles and addresses should be clearly written, preferably in block letters.

Early application for membership is requested.

7. *Subscriptions.*—*Ordinary Members*—£4 (four pounds) Sterling, which includes Congress badge, entertainments (except Congress dinner for which a charge will be made) and one copy of the full report of the Congress.

Student Members—£1 10s. (one pound ten shillings) Sterling, which includes Congress badge, and the right to attend meetings

but does not confer the right either to speak or vote, or to receive a copy of the Congress report. The report may, however, be purchased separately, at a price to be notified later.

Associate Members (wives and families of members)—£1 (one pound) Sterling, which includes Congress badge, the right to attend special functions which will be arranged for them and the use of special accommodation for social purposes.

8. *Travel Accommodation.*—Messrs. Thomas Cook & Son, Ltd., of Berkeley Street, London, W.1, have been appointed travel and accommodation agents to the Congress.

Hotel accommodation in London during August is likely to be heavily booked, and prospective members are advised to make early arrangements.

If assistance in booking hotel accommodation is required, members should get in touch with Messrs. Thomas Cook & Son direct.

It is hoped that it will be possible to obtain some travel concessions on the British Railways for members travelling to London for the Congress, details of which will be notified later.

9. *Enquiries.*—All enquiries and communications should be addressed to: Organising Secretary, XIVth International Veterinary Congress, 10, Red Lion Square, London, W.C.1, Telegraphic Address: Centaurum, Holb., London. Telephone No.: Holborn 3584.

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James Clark Memorial Fund

Elsewhere in this issue we publish the notes upon which Professor Russell Greig based his communication to two veterinary gatherings and which has for its subject James Clark (1732-1808), an Edinburgh practitioner described by Sir Frederick Smith as "The great veterinary figure of the 18th century," and "The father of modern veterinary hygiene."

As will be observed, both from the illustration of James Clark's grave in Canongate Kirkyard and from Professor Greig's reference following his biographical notes, the condition of the tomb is something of a reproach to the profession. We cordially endorse, therefore, both the sentiments of gratitude to Dr. Greig for bringing to light this new material relating to James Clark, expressed by Dr. J. T. Edwards in his further assessment (also published) of the worth of "that very fine man," and his example in lending support to the Memorial Fund which has been instituted. The object of the Fund is primarily to put the grave into a proper state of repair, also to provide a bronze plaque bearing an inscription. Subscriptions can be sent to the Treasurer of the Fund, Mr. A. R. Milroy, Moredun Institute, Animal Diseases Research Association, Gilmerton, Edinburgh, 9.

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PERSONAL

Mr. W. K. Hunter's Appointment

The Scottish Milk Marketing Board has appointed Mr. W. K. Hunter, M.R.C.V.S., as Senior Veterinary Officer to take charge of the Cattle Breeding Stations which they propose to establish. Mr. Hunter, who is a native of Troon, was educated at Ayr Academy. He graduated at Glasgow Veterinary College in 1937, and was awarded the Highland and Agricultural Society's Silver Medal for Veterinary Medicine. After a short period of general practice in Alloa, Mr. Hunter took up an appointment with the Ministry of Agriculture, Northern Ireland, where for seven years he was engaged in the general duties of a Veterinary Inspector. Since 1945 he has been Veterinary Officer in charge of the English Milk Marketing Board's Cattle Breeding Centres at Little Horwood, Buckinghamshire, and Moulton, Northamptonshire. Mr. Hunter will begin his duties with the Scottish Board in the early spring.

Appointment.—Mr. J. W. G. Leiper, M.R.C.V.S., of the Department of Helminthology, London School of Hygiene and Tropical Medicine, and administrative officer of the Field Station of the School, has been appointed to the post of Parasitologist in the Veterinary Science Division of the Research Department, Boots Pure Drug Co., Thurgarton, Notts.

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R.C.V.S. OBITUARY

Hall, Randal Brown. Suddenly, at his home, "The Knowe," Larne, Northern Ireland. Graduated Glasgow, December 11th, 1937. Died November, 1948; aged 38 years.

McKittrick, Joseph Christopher, Department of Agric., Upper Merrion Street, Dublin. Graduated July 22nd, 1909, Dublin. Died November 11th, 1948, aged 65 years.

The following deaths have only recently been verified :—

Carlisle, Hugh Henry, Saintfield, Co. Down. Graduated May 21st, 1895, Edinburgh. Died June 13th, 1947.

Gibbins, Johnson, Westbury-sub-Mendip, Nr. Wells, Som. Graduated July 22nd, 1880, Edinburgh. Died in July, 1947.

Skaife, F. W., M.D., D.V.S. Graduated May 16th, 1890, London. Died in U.S.A., October 3rd, 1947.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Foot-and-Mouth Disease:

Hants—Noah's Ark Farm, Ashley, New Milton; Northwood Park Farm, Sparsholt, Winchester. Hants (Nov. 26th).

Wilts.—Corton Down, Boyton, Warminster (Dec. 3rd, 1948).

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A number of horses washed up on the Cornish coast between Rame Head and Polruan had probably been thrown from ships taking them to the Continent. The animals, it is reported, had their back and front legs tied together and ropes around their necks. The R.S.P.C.A. are investigating.—*Farmer and Stock-Breeder.*

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

Correspondents are requested to write as briefly as possible.

DEHORNING BY LIGATURE

Sir,—A well-known Leicestershire farmer dehorns his cows by means of a rubber ligature applied to the horn base. Milking-machine teat-liners, cut down to form rings about 3/16 in. in width, are used for the purpose. Some shaking of the head is noticed for a few hours afterwards, but this discomfort apparently soon passes off and is not reflected in the milk yield. The complete horn and core drops after three to eight weeks, depending upon the age of the animal and thickness of the horn. The method must only be used during the winter months, as flies are liable to infest the site of ligation.

I should welcome opinions as to whether this method, which has the merit of simplicity, is to be recommended on humane and legal grounds.

Yours faithfully,

R. S. Cockburn.

55, London Road,
Coalville,
Leicester.

December 4th, 1948.

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MINIMUM SALARIES FOR VETERINARY ASSISTANTS

Sir,—In your issue dated November 27th, there appears an advertisement under a Box number for a second assistant in agricultural practice. The salary offered is seven guineas weekly, "live out," and for this princely sum the advertiser requires a graduate of some experience.

Some months ago the N.V.M.A. conducted a hard fought and partially successful campaign for increased salaries in veterinary appointments with the Ministry of Agriculture and certain Colonial Governments. This led to suppression of advertisements in the *Record* for posts which were not thought to offer sufficient remuneration. Why then, does the Association allow a member of the profession to advertise in its official journal, a post carrying the annual salary of £382 4s. ?

Yours faithfully,

R. V. Blamire.

78, Bonnyrigg Road,
Eskbank,
Midlothian.

November 27th, 1948.

[Members of the Association will be aware of the recommendations regarding the employment of young graduates, and the advertisement to which this letter refers was accepted as in keeping with these recommendations.—Ed.]